

Enclosure 2- Detailed Technical Comments
Atlantic Sunrise DEIS

EPA would like to provide the detailed technical comments on the following topics:

- 1) Alternatives – General
- 2) System and Major Route Alternatives
- 3) Aboveground Facility Alternatives
- 4) Construction, Testing and Restoration
- 5) Hazardous Geology and Soils
- 6) Groundwater, Wellhead Protection Areas, and Surface Waters
- 7) Streams and Wetlands
- 8) Vegetation
- 9) Wildlife and Aquatic Resources
- 10) Rare, Threatened, and Endangered Species
- 11) Land Use, Recreation and Public Lands
- 12) Conservation, Historic and Visual
- 13) Socioeconomics
- 14) Air
- 15) Noise
- 16) Reliability and Safety
- 17) Cumulative Impacts

1) Alternatives – General

- Some of the criteria used to compare alternatives appears to be limiting the range of reasonable alternatives. The third listed criterion is “Does the alternative offer a significant advantage over the Project?” It is unclear what is meant by significant advantage, or how much information is used to make this determination. EPA believes the EIS should carry reasonable alternatives forward for detailed study and that reasonable alternatives should not be dismissed prior to detailed analysis. The use of this criterion seems to imply that alternatives deemed to be of similar or equivalent adverse impact would be discarded. Even if it can be determined at a screening level that alternatives would have similar impacts, it would be unlikely that this low level of detail would consider the function, value, or quality of a resource. EPA reminds FERC and the applicant that resources have varying degrees of function, value or quality, which should also be taken into consideration in addition to estimated impact totals (acreage, miles, etc).
- Page 3-1 notes that not all conceivable alternatives are technically feasible or practical, giving limitations as to why alternatives may be incapable or impractical. While this may be correct, it is still necessary for the alternatives analysis to present the alternatives

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considered as well as the rationale for dismissal from further consideration. Please include the various alternatives to the proposed action that may have been considered but were dismissed from further consideration. The potential to provide a significant environmental advantage over the project is also mentioned on pg 3-1. Please clarify how this potential is determined and if this determination is made within the context of the NEPA document. State why it is assumed that significant environmental advantages over the proposed action do not occur. The differences in impacts between alternatives, particularly for alternatives that may have similar impacts, would best be evaluated in NEPA alongside of the applicant's preferred alternative. EPA suggests that the alternatives analysis be expanded to include additional alternatives that may have been dismissed from consideration.

- Please clarify how the start and end point locations for the proposed project were determined. Consider if system alternatives that utilize different start or end points may meet the project purpose and need. Receipt and delivery points were briefly mentioned over page 3-7 to 3-8, as well as determinations on the optimum location to aggregate the 1.7 MMDth/d and optimum point to tie CPL South into Transco's Mainline system. This discussion should be expanded upon as it provides insight into the rationale for the selected locations of the proposed action.

2) System and Major Route Alternatives

- System alternatives would need to provide additional 1.7 MMDth/d of natural gas to the delivery points required by the precedent agreements and provide services within a similar timeframe in order to be considered viable. Please clarify why these things are needed in order to be a viable system alternative.
- Although Table 3.2.3-1 presents impact amount which in some cases are greater than the proposed alternative, FERC should also consider that the impacts to these resources are not the same. For example, a greenfield alternative which impacts forests has a different impact on forest/habitat fragmentation than collocating a pipeline which would likely effect forest edge habitat as opposed to uninterrupted interior forest habitat. Please consider these types of differences as it may be preferable in some instances to have a greater edge effect than a lesser interior forest effect. Without considering the resource in greater detail it should not be assumed it is always preferable to impact fewer resources. Quality of resources should also be considered.
- It is not clear that the presented system alternative considered upgrading/expanding components of the existing pipeline diameter. This may have the potential to reduce ROW widths and impact amounts presented in Table 3.2.3-1.
- Many of the above comments and systems alternatives comments provided in Enclosure 1 also applies to the evaluation of major route alternatives.

3) Aboveground Facility Alternatives

- Please provide the siting criteria used for aboveground facilities, including compressor stations. Please provide a map of the alternate aboveground facility locations that were considered. It is stated in section 3.4 that FERC evaluated locations for proposed aboveground facilities, which involved desktop review and site visits, however it is not

clear how this evaluation informed the above-ground facility alternatives analysis. Please provide additional information on the evaluation process, as this appears to conflict with the statement in paragraph two of this section that “we did not identify or evaluate alternative locations for the new compressor station facilities.”

- Please describe how the amount of horsepower needed at each compressor station was determined, as well as how the spacing and distribution of stations along the proposed route was determined.
- It is stated on page 3-51 that the locations of the 605 and 610 CSs were being carried forward due to the lack of comments requesting for the stations to be relocated. The lack of comments or concerns about station locations during pre-filing does not eliminate the separate need for a fair alternatives analysis for above-ground facilities to take place. We recommend that an alternatives analysis for above-ground facilities, including compressor stations 605 and 610, be conducted and included in the EIS.

4) Construction, Testing and Restoration

- It is stated that 2,697.5 acres of land disturbed during construction would be restored and allowed to revert to its former use. Please clarify if there will be active work and replanting in these temporary workspaces. What does ‘allowed to revert’ mean? It seems to imply that it will be abandoned in place.
- Construction Right of Way (ROW) widths are given in section 2.2.2. Please clarify if the proposed construction ROW widths are equal to or greater than the standard FERC allowed width. Appendix C lists the locations where additional construction ROW has been requested. It appears that for large portions of the construction ROW additional/extra workspace is requested. For what portion of the ROW is Transco requesting additional workspace? As it seems that additional workspace has been requested for much of the ROW, please clarify how this does not represent the typical construction condition. It seems disingenuous to provide construction ROW widths in Section 2.2.2 although these widths do not appear to be applicable to the majority of the ROW.
- Evaluate impacts related to modifications to existing roads including tree, brush, or structure removal; widening; grading; installation or replacement of culverts; and addition of gravel.
- Table 2.3-1 – for the request modification to procedure:
 - V.B.3.c- clarify if the request is to decrease the 15 foot buffer to waterbodies or eliminate the buffer entirely. In these locations, were modifications to the pipeline considered as opposed to modifying this procedure? Please specify how Transco would ensure each waterbody is adequately protected.
 - VI.A.3 – it is unclear why soil storage must occur in wetlands. Clarify if upland locations were considered, and if why those locations were not utilized.
- We recommend minimizing the use of heavy equipment in environmentally sensitive areas, including wetlands. Hand clearing of vegetation should be considered as one way to reduce the use of heavy equipment in these areas.
- It is stated that wood chips may be spread across the ROW in a manner that does not inhibit vegetation growth. Please clarify if this is referring to a possible maximum depth of wood chips to be spread.

- Section 2.3.1.4 states that where necessary, the entire width of the ROW and ATWL would be graded. Please include information on how much of the ATWS will be graded.
- Is anything contained in the protective coating that could be considered hazardous?
- During backfilling is it anticipated that all excavated material will be placed back into the trench? If not, please state where this material will be placed. Where will rock and other items deemed not suitable for backfill be placed?
- It is stated that hydrostatic test water withdrawal location and rates would be in accordance with applicable permits. Although the locations, rates, sequence and timing of withdraws and testing may not be finalized, the currently proposed information is relevant to the EIS and should be included in order for potential adverse impacts to be fully analyzed and available to the public.
- Will test water be recycled from one segment to another? It would also be beneficial to add the flow rates of each water body to better understand if hydrostatic testing will impact water flow in streams and creeks. Please specify if test water will enter and exit the pipeline at the same locations or if different locations.
- It is not clear what will happen with the water after the drilling mud is separated. Will water be discharged back into the waterbody? How much water will be recovered or lost?
- It is stated that areas would be revegetated and would be monitored, evaluated and correct areas requiring remediation, however few specific details are provided. EPA suggests that a detailed revegetation plan, which includes monitoring, performance standards, plans, and an adaptive management plan, be prepared and finalized prior to the start of construction.
- What process or criteria was used in order to identify sensitive resources? Was it determined that all aquatic resources were to be considered sensitive?
- Post-construction monitoring is addressed in section 2.5.5. EPA suggests that a specific monitoring plan, which details monitoring frequency, content, methodologies, performance standards and report contents, be prepared and finalized prior to the start of construction.
- Page 2-38 states that if restoration activities are not adequate at the end of the respective timeframes, the post-monitoring program would be extended. In the event that restoration is not adequate, we recommend that additional restoration or compensatory mitigation be required. The temporal loss of resources should also be considered.
- Page 4-67 states that chemical may be added to test waters to eradicate non-native aquatic species. However it is unclear what specifically chemicals may be added to the water and what they are targeting. It is also unclear if these chemicals have the potential to affect native species as well as non-native species. Will biocides be used before water enters the pipeline or as it exits the pipeline and expelled into surface waterways. Biocides would have a great impact on the environment if used especially into surface waters.
- Page 4-67 states that test waters would be discharged into well-vegetated, upland areas or to receiving waters using energy dissipation devices to minimize the potential for stream scour. We encourage energy dissipation devices to be used both for upland and instream discharges. The discharge of water into uplands may create erosional features contributing sediment into nearby waterway, affect habitat, and become a source of erosion in the future if left unrestored. How will this be monitored, identified and restored if found? After water is used for testing, will it be immediately discharged?

Please explain if the testing process will result in higher water temperatures; if so, consider the potential impact of discharging warmer waters into receiving streams.

5) Hazardous Geology and Soils

- Please evaluate the potential impacts of HDD frack out. The last bullet on pg 4-25 seems to describe a construction monitoring and adaptive management plan. These should be developed and finalized in advance of any construction.
- Active mines and AML were identified. We recommend that a table of all the mines, quarries, and wells and their proximity to the project be provided in the EIS, which can be easily found without having to search for another document in FERC's elibrary.
- We also recommend identifying UST that may be within the ROW. Unanticipated UST may be encountered during construction and we recommend that the *Unanticipated Discovery of Contamination Plan* include USTs.
- Could the discharge or drainage of mine pool water be affected by blasting or other construction related operations? Is there potential for unanticipated new or shifting discharge or drainage locations to develop?
- Please clarify the term "susceptibility moderate" and its difference to "moderate" as used in Table 4.1.5-2.
- Please describe the areas along the pipeline route (construction or operation) that will be impacted by flash flooding, include the distance from the mile markers that the flood area is closest, if there incidences of flash flooding in the past, and a figure showing where flooding occurs.
- Please include a figure of areas along the pipeline project with the potential of landslides. Steep slopes are considered to be 30 percent or great, however it is unclear how this was determined.
- Pg 4-44 states that "Dewatering of trenches may result in temporary fluctuations in local groundwater levels. Trench water would be discharged into well-vegetated upland areas to allow infiltration and to minimize effects on the water table." Consider if the fluctuations in GW levels noted may affect any nearby wells, seeps, streams or wetlands. The discharge of water into uplands may create erosional features contributing sediment into nearby waterway, affect habitat, and become a source of erosion in the future if left unrestored. How will this be monitored, identified and restored if found?
- Testing of wells within 150ft is noted and expected to mitigate any damages caused by construction. EPA recommends that well testing and mitigation should be formalized in an appropriate plan and finalized in advance of construction.
- Vibration associated with blasting does not appear to have been considered, although it is stated that blasts would not be expected to adverse effect pipelines greater than 12ft away from the blast site. Vibration should be clearly addressed in the EIS.
- How will geophysical features in high risk areas be identified? A detailed long term monitoring plan is needed (mentioned on page 4-24). We recommend that a monitoring plan be developed and finalized in advance of construction.
- There are several maps and tables within Appendix J for areas of karst and concerns for karst seems to be missing (examples, Table 1-1 and Figure 1-1). These maps and tables are pertinent that they are included with the DEIS as there are a necessary portion of the

evaluation. Additionally, the DEIS should discuss how and when Transco will obtain access to survey the 12.3 miles to complete the MASW survey.

- The DEIS mentions in Table 4.1.2-2 that “*Compressor Station 155 would require limited or no subsurface disturbance and are, therefore, excluded from this table.*” On the other hand in Table 2.2-1 “the Summary of Land Requirements”, mentioned that Compressor Station 155 will affect 17.7 acres during construction. The FEIS should clarify and explain this information.
- General: A map that includes the Prime farmland of the Commonwealth should be included in the DEIS.
- A figure should be included of the areas of the project that have highly erodible soils. The figure should include the range of highly sloped areas within the project construction area to help the reader understand where the most hazardous places would be. With almost half to the project determined to be highly water erodible, the DEIS should discuss the impacts soil erosion should have on the environment from construction and operation such impacts to water quality, pipeline structure, vegetation, and habitat. If this information is in the construction manual, it should be put into the DEIS. The DEIS should pull the examples from the appendixes of the different mitigation measures used to prevent erosion in construction/operation areas of high gradient and/or highly erodible areas. Because of the safety concerns of construction, the DEIS should also list where these BMP’s will be used in conjunction with the high slope and erodible areas. Additionally, the DEIS should discuss what was done to avoid the most highly sloped areas.

6) Groundwater, Wellhead Protection Areas, and Surface Waters

- Preventing negative impacts to aquifers during construction and other pipeline related activities should be among the highest priorities. While the DEIS identifies five principal aquifer systems, as well as minor systems, it does not specify if these aquifers are Underground Sources of Drinking Water (USDW) under the Safe Drinking Water Act. All groundwater with TDS (total dissolved solids) of less than or equal to 10,000 mg/L is presumed to be a USDW.
- We recommend including which aquifers are used for what purposes, and the water quality and yield information available for each aquifer. Describe the recharge and discharge zones for each aquifer and depict on a map, if possible.
- We recommend including water quality data for the groundwater. Summarize the data and provide references for each aquifer (e.g., USGS, State agency reports, or state geological survey reports.)
- There are 90 identified private wells or springs within 150 feet of the proposed route, and in Pennsylvania 8 of the wells are located in areas of known karst. Please provide a map of these private supplies.
- The propose construction will cross 9 Zone II Wellhead Protection Areas (WHPA) in Pennsylvania, with crossing lengths of 0.3 mile to 1.2 mile. As such, the project has the potential to impact private well drinking water supplies. The DEIS states that Transco has committed to testing water supply wells and springs within 150’ of construction, subject to landowner permission. EPA also advises that in-depth hydrogeological impact

studies may be required to assess potential contamination impacts, in addition to the proposed monitoring plan.

- Groundwater in shallow aquifers and karst terrain is also present in areas along the pipeline route, including in the area of 8 known private water supplies. Due to its connection with surface water through sinkholes, caves and swallets, groundwater in karst geologic terrains is especially vulnerable to contamination. EPA recommends that to prevent impacts on public and private water supplies, the pipeline should avoid karst terrain, and consider route alternatives.
- It is noted in the DEIS that “If possible, Transco would locate trench spoil piles on the downhill side of the karst feature to prevent direct runoff into uncovered features.” EPA recommends that spoil piles be located downhill of the karst feature, or removed from the site if that placement is not possible. It is not recommended that spoils be placed uphill of these features.
- EPA anticipates that impacts to wells may occur where Transco has not conducted this pre-monitoring and Transco should be prepared to fairly address these situations should they occur. The EIS should communicate how those impacts may be mitigated
- It is noted in the DEIS that blasting along the proposed route may potentially impact yields and/or increase turbidity. Groundwater flow impacts should also be considered. EPA recommends that alternatives to blasting be fully explored. We also recommend that blasting within close proximity to bedrock wells and in karst terrain be avoided and/or should not be conducted.
- Preventing negative impacts to surface waters during construction and other pipeline related activities should be among Transco’s highest priorities.
- The pipeline facilities would cross 9 watersheds or drainage basins. These are properly identified by name, HUC-8, drainage area and location. The 8 watersheds crossed in Pennsylvania are identified as discharging into the Chesapeake Bay.
- The DEIS includes information on the CWA section 303(d) listings for Pennsylvania and Virginia. This information does not appear for other impacted areas.
- The DEIS identifies four potable surface water intakes within 3 miles downstream of waterbody crossings impacted by this project. These intakes are identified by facility, waterbody ID, waterbody name, milepost location, distance to intake structure, water intake operator and the primary use of the four surface water intakes.
- EPA recommends that maps of the source water protection zones be included in the EIS.
- EPA does not recommend that projects pass through any identified Source Water Protection Area, and alternative routing should be considered. For crossings in major waterbodies and SWPAs where route alternatives are not possible, sediment modeling can be conducted to indicate the predicted fate and transport of excavated or dredged sediments. The EIS should also include descriptions of site-specific BMPs that will be employed within each SWPA and WHPA to mitigate any construction or stormwater runoff related impacts.

7) Streams and Wetlands

- It is not clear that the determination that the effects on surface water from hydrostatic testing would be minimized and not significant. It does not appear that any minimization efforts or practices have been included to address the withdrawal of large volumes of

water from streams leading to effects of recreational and biological use, especially when diversions constitute a large percentage of the source's total flow or volume. It does not appear that effects to minimize or avoid loss of habitat, change in water temperature and dissolved oxygen levels, and entrainment or impingement of fish or other aquatic organisms have been considered or included. Without further analysis to specific streams of concern, it should not be assumed that impacts have been minimized and are not significant. EPA is particularly concerned about Fishing Creek, which is a high quality water and fishery. Fishing Creek could face complex impacts resulting from a combination of activities, including water withdrawals, blasting, vegetation removal. The combination of impacts from these activities should be considered, especially for sensitive resources like Fishing Creek.

- Table K-3 in appendix K identifies the waterbody/floodplain locations that would be crossed by the proposed pipeline, however it does not appear that the effects of removing floodplain vegetation have been considered. It is not clear if construction or operation of the pipeline in floodplains will result in increased flooding on adjacent properties. EPA recommends this be evaluated prior to construction, especially as the alternatives analysis states that route variations were specifically included due to placement of the pipeline in a floodplain and flooding concerns associated with vegetation removal.
- Would revegetation along waterbodies be limited to shrub/scrub vegetation or would areas that were previously forested be reforested?
- Please clarify if, where, and the amount of water that will be discharged from stormwater, dewatering structures, or hydrostatic testing. What efforts or practices have been incorporated to reduce potential adverse effects to water quality from these discharges?
- The Public Notice briefly states that additional temporary workspace maybe needed. Table K-5 in Appendix K lists additional temporary workspace requests within 50ft of a waterbody and provides a justification for this modification. These locations should be identified within the CWA Section 404 application so that the impacts can be accounted for and the locations monitored for successful restoration after the project's completion.
- Transco has made more than 190 requests for additional temporary workspace within 50ft of waterbodies. This constitutes a request for additional temporary workspace for greater than 50 percent of the crossings proposed by Transco. Although Table K-5 includes Transco's justification, in many cases it does not appear that this modification request is fully supported. Many requests state that there would be less impact than transporting material to be stockpiled elsewhere. What other locations were considered? Include material placement as part of the alternatives analysis.
- Robust success criteria for successful wetland restoration after construction is needed. There are a few limited measures included but they are limited to vegetative success. We suggest that successful wetland restoration also be tied to the CWA Section 404 permit. In the event that wetland restoration is unsuccessful within an appropriate timeframe, we suggest that additional compensatory mitigation be required or evaluated if appropriate
- The EIS states that the primary impact on wetlands from pipeline construction and right-of-way maintenance activities would be the temporary alteration of wetland vegetation and permanent conversion of forested wetland to scrub shrub or emergent wetlands. The EIS also noted that soil compaction may alter hydrology and soil conditions. We recommend the EIS include how these impacts would be minimized, or mitigated, which appears to have been part of the information provided in the PN. Please consider how to

restore preconstruction wetland hydrology. EPA is concerned that impacts have not been accurately characterized within the EIS.

- The EIS suggests that plowing could be conducted to de-compact soils affected during construction. We suggest that additional information on the proposed plowing, including depth of plow. In areas where compaction is of concern, pre and post construction testing can be conducted in order to measure changes in compaction rate.
- Fifty-one of the 251 total wetlands crossed by the proposed pipelines in Pennsylvania are classified as exceptional value (EV), with 15 of these containing a forest component. The acreage of EV wetlands impacted or crossed by the proposed project has not been provided. It isn't clear what avoidance and minimization measures have been taken with respect to these resources. Were any route alternatives evaluated to reduce impacts to EV waters? It is unclear that the CMP sufficiently addresses EV wetland impacts. It is unclear if CMP includes streams.
- No maps have been provided. EPA recommends that maps of EV areas be provided as they would be particularly helpful.
- Approximately 41.22 acres of wetlands will be temporarily impacted. The applicant should evaluate the temporal functional loss for all wetland types, including PEM, and provide mitigation for these losses.
- The mitigation plan needs to address how the applicant will monitor and control the threat of invasive vegetation within the project boundaries. Disturbed soils offer an excellent opportunity for invasive species to take hold of a sensitive area and can quickly impact the natural flora of the ecosystem.
- Page 13 of the Public Notice states that wetlands will be seeded with annual rye grass. We recommend the disturbed wetland areas be replanted with a wetland seed mix that is appropriate for the location of the impacts, as well as annual rye grass. The rye grass will provide quick stabilization, and the wetland mix will provide seed source for the successful restoration of the impacted area. Additionally, mitigation should discuss seeding will include native pollinator vegetation that will forward the cause for pollinator species such as bees.
- Clearly state when remaining surveys will be completed? Please describe how discrepancies between the remote sensing and field verification will be shared in the event that surveys are not completed prior to the FEIS. Page 4-69 states that the remote sensing methodology was tested for accuracy on field-delineated land area. The EIS does not describe the results of this comparison and testing.

8) Vegetation

- We recommend including a figure of the different types of vegetation communities in a map with an overlay of the pipeline project. This will help the reader better understand the range effect the project will have on the different vegetation types and the variety of vegetation that will be covered by the area of the project.
- Page 4-76 states that modifications to existing compressor stations would have limited effects on vegetation communities. Modifications at CS 517 will impact a total of 32 acres during construction. Modifications at CS 520 will impact a total of 36.1 acres during construction. Modifications at CS 190 will impact a total of 30 acres during construction. Considering that these 3 stations will impact greater than 90 acres

combined, we suggest that vegetative impacts to these areas be considered and described in the EIS.

- Page 4-80 references figure B-2 from the Draft Migratory Bird Plan found in Appendix M. However this figure is located in Appendix B of the Draft Migratory Bird Plan. The appendices for the plan have not been included in the EIS.
- Please include a map of the interior forests that will be affected by the project. The DEIS should include an explanation of the method used to identify interior forest patches. Additionally, this section of the DEIS should list species that will be affected by the destruction of interior forests habitat and if any of those species are on Federal or state endangered species lists. If this is mentioned in another section in the DEIS, it should be referenced in this section.
- Agricultural lands including specialty crops (orchard and tree farms) and organic and no-till farms were mentioned earlier in the document, however they were not addressed in the vegetation section although impacts to agricultural lands are determined to be temporary to short-term.
- Please formalize the revegetation plan(s), which should include adaptive management. The DEIS does not include Transco Project-specific Noxious and Invasive Plant Management Plan. This plan should be included in the appendixes. This section should include a brief discussion on how the project will reduce the spread of invasive species along edge habitat.
- Some portions of the EIS indicate that forest impacts may take decades to recover to pre-construction conditions. It appears that impacts to forests would be long term if not permanent. Minimization efforts and mitigation for these impacts are not presented, and should be included in the EIS. Despite this, it is concluded that the permanent conversion of forested lands would not result in significant impacts. It is not clear what this conclusion is supported by. We suggest that FERC consider if significant impacts to interior forests may occur as a result of the proposed project.

9) Wildlife and Aquatic Resources

- 171 waterbodies have been identified by PFBC as containing sensitive fisheries in PA. All but 4 of these special concern waterbodies will be crossed using a dry crossing method. While direct instream work for crossings would have the potential to impact fisheries, there are other construction related activities that may impact fisheries and aquatic resources that should be considered. Vegetation clearing adjacent to streams and in the riparian corridor has the potential to reduce shade over stream, increase stream temperature, reduce carbon inputs to stream, etc. Shading impacts mentioned as temporary, earlier stated that forested areas could take decades to be restored. It is unclear that any active planting is planned.
- Unclear if the construction timing windows in fisheries of concern in PA are focused on fish spawning or recreational fishing.
- The aquatic resources considered only included fisheries. This is a limited consideration of aquatic resources, which can also include benthic macroinvertebrates, salamanders, and other species. No discussion on freshwater mussels was included in the EIS.

- Please be sure that all references noted in the EIS are included in Appendix Q References. Page 4-100 references Beschta and Taylor, 1988, however it does not appear to be included in Appendix Q References.

10) Rare, Threatened, and Endangered Species

- The FWS Pennsylvania Field Office has noted that the Project is within 5 miles of five known Northern Long-eared bat hibernacula in Schuylkill, Northumberland, and either Lancaster or York Counties (Shellenberger, 2015a). Two of the hibernacula are within 0.25 mile of the Project in Northumberland County between CPL South MPs 84.9 and 85.5. FERC has recommended that complete Northern long-eared bat survey data be filed prior to the end of the DEIS comment period. Mist net surveys conducted resulted in the capture of 70 northern long-eared bats. More than 1,000 acres of northern long-eared bat habitat would be impacted by the proposed project. It is not clear what specific avoidance and minimization efforts or route changes have been incorporated with regard to the northern long-eared bat. FERC has determined that the proposed project is likely to adversely affect the northern long-eared bat. Will any additional surveys be completed for this bat, considering that not all parcels were available for survey? Is FWS comfortable moving forward with not all areas surveyed?
- Please clarify if the recommended frequency, duration, and timing of all ESA surveys were followed. Have any of the recommended surveys not been conducted?
- Page 4-113 states that Transco will conduct wetland delineations on all parcels without survey access with potential northeastern bulrush habitat once they become accessible in 2016. Route was modified to avoid impacts to northern bulrush. Please clarify why the FWS recommended 300ft set back will not be attained.
- Incomplete surveys for Alleghany wood rat; the surveys should be finalized prior to decision-making and shared with public and agencies.
- While Transco anticipates avoiding impacts at the Susquehanna River due to the use of the HDD crossing method at the two crossing locations, Transco is considering conducting baseline mussel surveys in case an alternative crossing method becomes necessary or other unanticipated impacts could occur. Please explain how impacts will be assessed and provided to the public. Will further NEPA assessment be made public?
- Concern with how to address changes in crossing methods and unanticipated impacts in the event that a different unevaluated crossing type was necessary.
- No main conclusions were drawn about the impacts to RTE species. It is critical that potential impacts be identified, presented, and acceptable avoidance and mitigation determined.

11) Land Use, Recreation and Public Lands

- The proposed action crosses the Appalachian Trail at MP M-200 0.1 on SGL 211. The permanent right-of-way would create a new corridor although a forested buffer may be maintained along the right-of-way on either side of the Appalachian Trail, pending further evaluation of crossing methods and consultation with the PGC. Concern with crossing AT, and lack of certainty about buffer and veg along trail. Please clarify what the technical limitations of the conventional bore. Although the crossing will use a bore

method, it does not appear that impacts from construction on trail use and user experience has been considered.

- It is stated that Transco will develop a site-specific crossing plan, clarify which of the streams within Ricketts Glen State Park will be crossed and provide any available data about stream characteristics and quality. It is not clear that the user experience has been considered. Is the proposed crossing near any trails, trailheads, or other recreational locations? How will construction impact park users?
- PGC requested no work within October 1- December 30, which has not yet been agreed to. EPA encourages FERC and the applicant to incorporate and comply with the TOY restrictions suggested by PGC for each of the requested SGLs. If work is conducted during this period, please consider and address worker and user safety as appropriate.
- Lebanon Valley Rail – Trail states that since the crossing will be in agricultural land use and would therefore not affect the surrounding landscape. It is not clear why this has been assumed. The proposed action would preclude these areas from becoming forested in the future.
- The Chapman loop would cross Sproul State Forest at four locations, additionally the installation of a new MLV and communication tower is proposed in the SF. Although portions of the loop would be collocated, it is unclear if other avoidance and minimization measures have been considered in order to reduce impacts to the SF. A site specific crossing plan is not available. The EIS states that the looping was sited away from active recreational areas, however no maps or detailed information was presented. It is unclear if recreation within the SF will be impacted.
- Page 4-135 notes that concern from commenters about possible effects on septic systems/drain fields during construction. The EIS concludes that consultation by Transco with landowners to identify and avoid systems as well as compensate or damage that occurs during construction that impacts would be less than significant. Linear projects have the potential to impact these systems. Pipeline construction or maintenance may result in the need for systems to be relocated, or result in systems becoming unviable if it isn't possible for them to be relocated. EPA recommends that an evaluation of these types of impacts to systems be included in the EIS. This could be particularly important where systems are can no longer operate and result in additional displacements.

12) Conservation, Historic and Visual

- It is stated that there is one known WRP is near the construction area and one known FRPP easement is crossed by it. Please clarify if all lands within the construction area have been evaluated for WRP and FRPP easements. Please provide the restoration measures relating to the FRPP crossing.
- The DEIS mentioned that Transco contacted every SHPO's office and that: "*Transco submitted a revised plan for unanticipated discoveries during construction. To date, Transco has not filed the North Carolina SHPO response regarding this plan.*" It seems that this statement is the same for each state affected in the DEIS. We recommend including the final concurrence statement from each SHPO office regarding the appropriateness of these plans.

- Please clarify why it was not feasible to use the conventional bore method to cross Tucquan Creek, a State designated Wild and Scenic River. What were the results of the geotechnical investigations that limited this method?
- Please describe the methodology used to identify and evaluate impacts to visual resources. It is unclear if a consistent approach was used to assess visual impacts. Specify if the same method was used for pipeline and aboveground facilities.
- Height information is only provided for communication towers, which will range from 40-190 feet in height. Do communication towers represent a hazard for birds and bats? Are guy wires necessary for communication towers?
- What will be the maximum height of facilities at above-ground facilities, including compressor stations? From what distance will compressor stations be visible? Clarify if compressor stations will be visible from residences, recreational areas, or other key viewpoints. It may be useful to develop a table for compressor stations that is similar to Table 4.8.8-1.
- Please clarify if the vegetation that is stated to provide visual screening will provide screening in all seasons or just through the spring and summer months. Please address facilities that will be visible above the existing tree line or vegetation height. The EIS notes that additional visual screening will be provided by the applicant, however it is not clear what is proposed and what amount of screening it will provide.
- Maps, visual representations, site plans or figures, and/or photos of example aboveground facilities should be included in the EIS. These would be incredibly useful for the public and other stakeholders to have a better understand of that the actual facilities proposed will look like.
- Please consider potential impacts from lights or beacons that may be on communication towers and other aboveground facilities.

13) Socioeconomics

- Page 4-168 concludes that “given the study area population (totaling 12,281,054) and the distribution of the construction workforce, the addition of 6,490 people would not be a significant change.” Please clarify where this total study area population was derived from. Table 4.9.1-1 provides the 2013 populations for each of the counties in PA affected by the project; the total population for those 10 counties is 1,517,537.
- Please provide estimated workforce totals for Counties that are affected by more than one project facility. For example, construction for CPL North, CPL South, CS 610, and the West Diamond Regulator Station will take place in Columbia County. It is unclear if the impacts from these combined construction/workforce have been considered. It be beneficial to consider workforce impacts by spread.
- Several studies relating to property values and mortgages are referenced in Section 4.9.5. It may be useful to include information about the size of pipelines (pipe diameter) in order to more fully understand how these relate to the proposed project.
- Table 4.9.8-1 and 4.9.8-2 should also include data specific to Pennsylvania.
- No maps relating to EJ were provided.
- It would have been preferable for the minority and low-income assessments to have been conducted using the minority and low-income population percentages of the study area as a whole as basis for evaluation. Comparisons of minority and low income populations for the county is appropriate in some cases, but in others may represent too large an area for

meaningful comparisons to be made. Comparison of the demographics of the study area to state, county and local benchmarks made provide more meaningful and insightful information as to the localization of minority and low-income populations of concern. Additionally, Environmental Justice concerns are local, occurring at specific points in communities, rarely are they impacting vast areas at a given time. We encourage FERC to attempt to focus on places where adverse impacts are more likely to occur and assess these impacts more comprehensively.

- As noted above, in some instances it may be more appropriate and informative to consider minority and low income populations at a more refined level of study. Please consider conducting a more detailed study for areas surrounding CSs and other aboveground facilities perhaps using block group of census tract level data.
- Please clarify the location of the 11 open houses and how open house information was disseminated to environmental justice communities within the project area (construction and operation).
- EPA encourages FERC to conduct meaningful engagement of environmental justice communities. It appears that some scoping meetings were located in counties with EJ locations. The DEIS does not disclose if any accommodations, such as an interpreter or providing literature/project information in other languages, were needed or made for non-English speaking communities.
- The DEIS states that “none of the counties that would be affected by the Project in Pennsylvania have the potential to be in environmental justice community based on race.” In the following paragraph, the DEIS states that three counties within the project area have populations larger than the state average, therefore considered an environmental justice community. This discrepancy should be clarified.
- The EJ analysis does not consider construction and displacement impacts on environmental justice communities. The DEIS should analyze if a disproportionate amount of environmental justice communities have construction related displacements, as well as construction truck traffic or water turbidity to areas that are used for subsistence fishing.
- Children’s health was not considered.
- EPA sees this project as a great opportunity to implement Health Impact Assessments (HIA). HIAs from the communities surrounding the new electric compressors and the communities surrounding the traditional gas compressors. The results of these assessments would help to define the services or interventions required to help to prevent or mitigate health problems associated to this type of projects if any. Additionally, the HIAs will ensure considerations of environmental justice (EJ - EO12898), children's health (EO – 13045) and human health as called by the NEPA process. We are providing some resources below. Also, you might contact EPA for guidance on this matter.
<http://www.humanimpact.org/new-to-hia/faq/>

- EPA assumed that the facilities would be equipped with emergency generator(s). EPA wants to make you aware that there are two specific rules for new source engines. One of these rules would apply to a generator for this facility. In order to learn and comply with these rules please visit: <http://www.epa.gov/region1/rice/>.

- EPA has issued three final rules that together will curb emissions of methane, smog-forming volatile organic compounds (VOCs) and toxic air pollutants such as benzene from new, reconstructed and modified oil and gas sources, while providing greater certainty about Clean Air Act permitting requirements for the industry. To comply with these rules please go to: <https://www3.epa.gov/airquality/oilandgas/actions.html>
- EPA recommends that for new equipment utilize contract specifications requiring advanced pollution controls and clean fuels: <http://www.northeastdiesel.org/pdf/NEDC-Construction-Contract-Spec.pdf> and <http://www.epa.gov/cleandiesel/technologies/index.htm>
Implement diesel controls, cleaner fuel, and cleaner construction practices for on-road and off-road equipment used for transportation, soil movement, or other construction activities, including:
 - ✓ Strategies and technologies that reduce unnecessary idling, including auxiliary power units, the use of electric equipment, and strict enforcement of idling limits; and
 - ✓ Use of clean diesel through add-on control technologies like diesel particulate filters and diesel oxidation catalysts, repowers, or newer, cleaner equipment.
- EPA recommends the use of low maintenance trees at the project sites (reduces pollutants emissions from maintenance activities) and the construction of Rain Gardens for erosion and runoff mitigation while decreasing impervious surfaces to improve ground water quality. By adopting these low-cost easy to achieve suggestions, extra enhancements will be achieved such as noise reduction and aesthetics improvement.

14) Air

- Background air quality monitoring data for PA and MD from 2013 was presenting using EPA AirData website as the source in Table 4.11.1-1. Please provide a map of the locations selecting showing their spatial relationship to the proposed CSs. County level data may not provide sufficient detail to analyze site level air quality conditions. No data was presented for Virginia, South Carolina and North Carolina, please explain why sources in these states were 'not considered to be significant'.
- Construction emissions of CO₂ (not CO₂e) are estimated to be 163,535.5 tpy. Does reporting construction emissions in CO₂ not CO₂e effect the analysis? Should it be reported as CO₂e to be consistent with other emissions data?
- Please include operational emissions for CS 605 and 610. No operational emissions were given for CS 605 and 610. These CSs will be electric-driven, and it is stated that minor methane emissions would not have a significant impact on local air quality.
- Emissions data should clearly include estimated emissions related to fugitive emissions, venting, blowdowns, gas-fired emergency shutdowns and gas heaters. The combined CO₂e emissions for existing and modifications at CS 517 and 520 are estimated to be

296,841 tons and 224,792 tons, respectively. It is unclear if venting, blowdowns, and other sources are included in these totals.

- Emissions data for all CSs included in the proposed project should be provided, including CSs 605, 610, 517, 520, 190.
- The emissions for CS 517 and 520 are based on the operating condition of 0 °F. Does the temperature of the operating condition effect the emissions estimated? Why was zero degrees F chosen? Was zero selected for all estimations made? It is unclear if estimates made at zero are conservative estimates or if estimates accurately represent anticipated working conditions.
- Please clarify if the emissions reductions and pollution controls, including low NOx combustor to control NOx emissions, being used at CS 190 will also be implemented at other stations. As it appears that the reductions and controls can be effective, in instances they are not proposed, please clarify why.
- Modifications at several stations is proposed, which will include the installation of gas turbines. Please clarify the rationale for not using electric powered turbines at these locations. The use of electric turbines may result in fewer local emissions at compressor stations.
- The DEIS should clearly explain the methodology used for considering operational emissions to local air quality.
- EPA is concerned by the lack of air modeling analysis provided as well as by the apparent lack of responsiveness by the applicant to FERC's requests for this critical data. According to the DEIS several compressor stations have potential to be significant, however appropriate air modeling has not been conducted and included in the DEIS. Not only will this modeling likely be a required component of any future air permits being sought, it would provide essential information for consideration in this EIS. FERC has recommended that the modeling be completed and filed prior to the end of the DEIS comment period, which EPA strongly supports. We recommend that this modeling data be made available for the public and other stakeholders within the NEPA process.
- Six months of air quality monitoring collected near the stations was available for DEIS. Transco has agreed to gather air data for three years post construction. Please clarify what will be done with the data collected during this time and how it will be shared with the public and other stakeholders. Clarify the steps that will be taken should the data show air impacts are occurring, and how impacts will be mitigated, and how future impacts will be prevented.
- Please include a map of selected air monitoring locations. Selected locations were varying distance from the nearest structure, please clarify if the same siting criteria were used for each stations (CS 517, 520, and 190).
- The data presented was collected CS 520 and 517 was collected while stations were not running at full capacity, which appears to underestimate emissions expected for the project. DEIS states "Compressor Stations 517 and 520 were not operating at the full station loads during air quality monitoring. Therefore, the potential exists for higher impacts from existing sources when Compressor Stations 517 and 520 are operating at full load."
- Additionally, it is not clear if CS 517 was fully operational during the monitoring period, as the EIS states that this location won't be finished by July. So it isn't clear what this data informs. Please more clearly explain what the data collected is meant to inform and

how data collected at less than full capacity is useful for the EIS. EPA is unclear that this information is useful within the DEIS as it may obscure the public's understanding of operational emissions.

- Monitoring data provided for CS 520 doesn't include the full dataset for SO₂, by excluding data collected during a system failure. The DEIS states that the failure was corrected and subsequent values were included. Please clarify why data collected during the system failure wasn't this included. The DEIS should consider possibilities of similar system failure to occur in the future and potential impacts.
- The DEIS mentioned: "*Activated carbon filtration would be installed for deodorization at Compressor Station 155. An activated-carbon filter cartridge, housed in carbon-steel filter housing, would be designed to remove mercaptan from the odorized natural gas.*" Please clarify and explain this information. Why will mercaptan be removed at this location? Please explain.

15) Noise

- The DEIS should describe the hours the HDD will be used, specifically if construction will be 24 hours until the pipeline is crossed and the estimated days the HDD will be used (example: days or hours). Also, if the HDD fails, how long will this extend the construction? These descriptions could clarify the impacts to NSA's.
- There are several residences north of the Susquehanna River HDD sites that are not considered NSA's (see Figures 4.11.2-7 and 4.11.2-8). The DEIS should consider these as NSA's as they are under ½ miles from the HDD entry/exit site and should be assessed for impacts from noise construction. In some cases, they seem of equal distance to some other NSA's.
- Figures on operational noise should be included in demonstrating the location of NSA's for the new 605 and 610 compressor stations.
- Current noise levels are provided for CS 605, however they are not provided for any of the other proposed CSs. Please provide equivalent information for each of CSs included in the proposed action.
- The DEIS states that "although the noise of a unit blowdown event could be audible at the nearby NSAs, it would not be a substantial noise impact. Moreover, any unit blowdown events would be infrequent and would last for only a short period of time (1- to 5-minute period)." Please clarify or give an example of what a substantial noise impact would be. We also suggest including why blowdown events occur and how often they are expected to occur within certain timeframes (days, month, year, etc).
- The proposed action includes modifying some existing CSs by increasing horsepower. Please clarify if changes in operational noise will be monitored and reported to FERC for any period of time after modifications are made.
- The noise surveys should be made available to the public via appendixes. These appendixes should be referenced in the DEIS.

16) Reliability and Safety

- Page 4-246 states that Transco has committed to several safety measures that exceed requirements. One measure includes hydrostatic testing of the entire pipeline at a higher

level suitable for Class 3 locations. Please clarify if there are different levels of hydrostatic testing requirements based on the Class designation and include this information in the EIS. Will hydrostatic testing of the entire pipeline at a higher level result in different potential environmental impacts? Or are there different water use requirements? While we understand the need to ensure safety, it is not clear if there are alternatives related to these measures that could result in fewer adverse impacts. What level of safety is to be attained?

17) Cumulative impacts

- The mineral facilities/resources included in Appendix I should be included in the CIA.
- Leidy Line system should be included. Crosses Ricketts Glen, and SGL 206. Why are upgrades to this line not viable? Have they been considered? When was this line put in service? Transco's Leidy Southeast Expansion Project³³ (discussed briefly in section 4.13.1) was approved by FERC in December 2014 and placed into service on January 5, 2016. At its closest points in Luzerne, Lycoming, and Columbia Counties, facilities associated with the Leidy Southeast Expansion Project are between 0.0 and 8.4 miles from the Atlantic Sunrise Project. The project was built using a 105-foot-wide construction right-of-way with a 50-foot-wide permanent right-of-way retained for operation, although, due to overlap, most of this comprises existing permanent right-of-way associated with existing Transco pipelines.
- What is the status of the restoration associated with the various projects given, as many are stated to be in service? Have additional plantings been necessary, or even additional mitigation. How were these impacts mitigated? What mitigation was completed? Are they good actors? Do we believe efforts will be successful? Did work have to be stopped, how did those other projects go? Any lessons learned?
- ROW widths for other projects are given, is any estimation of veg, ROW impact provided?
- Please include a map(s) to show the various spatial/geographic boundaries used for the cumulative impact assessment.
- We recommend that the analysis consider potential cumulative impacts to wildlife and FIDS.
- It is unclear what geographic or temporal scope is being used for certain resources, including vegetation and wildlife. We suggest that these be more clearly defined in the EIS.
- It is not clear that past and present actions were included in the cumulative impact analysis for land use or wetlands. The DEIS states "The Atlantic Sunrise Project in combination with other foreseeable future actions listed in the table in appendix P would result in temporary and permanent changes to current land uses."
- The DEIS states regarding cumulative impacts on recreational areas, "At present, we are not aware of recreational areas that would be cumulatively affected by the Atlantic Sunrise Project and other potential actions. As a result, although the Project would impact recreation and special interest areas, we do not anticipate significant cumulative impacts on these areas." Earlier in the EIS it is stated that Atlantic Sunrise will be collocated (or partially collocated) through recreational areas like Ricketts Glen. The lines that the project is being collocated with should be considered as past, present and reasonably

foreseeable actions. We suggest that cumulative disruption to the parks and reduction of resources be considered in the EIS.

- Cumulative impacts to visual resources are presented. This section briefly notes compressor and meter stations but it doesn't consider other CSs from other projects. What CSs are near the proposed CSs associated with Atlantic Sunrise?
- The DEIS concludes that FERC-jurisdictional and non-jurisdictional projects could contribute to cumulative impacts, however these cumulative effects are not expected to be significant. Please clarify this statement address potential cumulative impacts on all resources?
- Please clarify if CS 517 and 520 are being constructed as part of the Leidy Southeast Expansion project, or if the horsepower included as part of Leidy Southeast represent an expansion to a previously existing station. It is not clear that cumulative impacts from CS operation considers other CSs nearby, or valve releases, leaks or blowdowns. Please clarify if the emissions associated with the Leidy Southeast project are accounted for in the EIS.
- The EIS does not appear to include a discussion on potential cumulative impacts on residences, although commercial/residential and mixed development projects were included as past, present and reasonably foreseeable actions. Atlantic Sunrise crosses numerous residential properties and passes within 50 feet of about 90 residential structures, including 68 houses or townhomes and 22 garages or sheds. 73.7 acres of residential land will be affected by construction, of these 20.4 acres would be within the permanent ROW. FERC should consider the cumulative impact on residences and the community.
- Surface water withdraws are discussed on page 4-274, and present withdraw information for the project and for Marcellus Shale compared to state totals, which is contradictory to the cumulative study area for waterbodies and wetlands, which are stated to be at the watershed level. Please revise this data to more accurately compare, or at a minimum include WS scale data. Are any of other withdraws from the same streams proposed to be used by Atlantic Sunrise?
- Although the EIS concludes that some loss of wetland function could occur from cumulative impacts, no discussion of wetland functions and values was included.
- Page 4-275 states that "Although construction of the Atlantic Sunrise Project along with the other actions in the ROI would result in the conversion or reduction in the amount of forested and woody wetlands in the vicinity, the creation of new wetlands and restoration or enhancement of existing wetlands as may be required by the USACE and individual states would appropriately mitigate for these impacts and minimize any cumulative wetland effects." The analysis includes very little consideration of conversion, and does not provide an estimate of what the cumulative impact of conversion is. As previously state in our comments, mitigation should not be relied upon to prevent cumulative impacts. When considering wetlands we recommend looking at resource trends and considering historic wetlands.
- Vegetation and Wildlife—Page 4-275 states "The effect of clearing would be greatest during and immediately following construction and would diminish when the disturbed areas are restored and revegetated and the wildlife that were displaced during construction return." This does not acknowledge that it could take decades for forest to recover, potential change in community, permanent loss of interior forest, possible

introduction of invasive species, etc. Since it is not clear that an active vegetation restoration plan has been developed, it should not be assumed that the area would be revegetated and wildlife would return. Please address the potential for cumulative impacts to interior forest.

- Page 4-277 states “Transco has reduced the potential for cumulative impacts associated with the Atlantic Sunrise Project by collocating the pipeline and aboveground facilities where possible with existing rights-of-way and existing aboveground facilities. Following construction, Transco would revegetate disturbed areas and monitor these areas to ensure revegetation is successful. Previously forested areas occupying the temporary right-of-way and other temporary workspaces would be allowed to regrow, and vegetation maintenance on the permanent right-of-way would be restricted.” Limited detail about the restoration plan has been provided in the EIS. We urge FERC to develop a detailed restoration plan that goes beyond allowing vegetation to regrow.